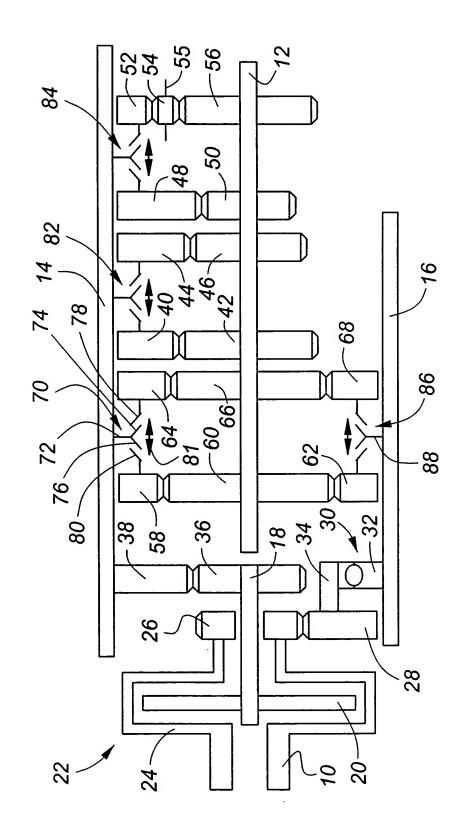
Title: LAYSHAFT AUTOMATIC TRANSMISSION

HAVING POWER-ON SHIFTING Applicants: David Janson, Reid Baldwin

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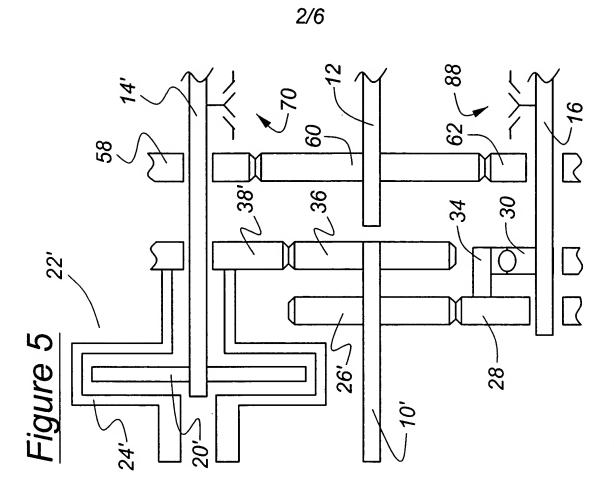


Figure

Titl: LAYSHAFT AUTOMATIC TRANSMISSION

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| | 7 |
|---|---|
| | G |
| | I |
| • | 0 |
| Ļ | |

| Number of Teeth | 43 | 35 | 29 | 25 | 23 | 43 | 19 | 27 | 33 | 37 | 41 | 19 | 19 | 38 | 27 | 56 | 37 |
|--------------------|----|----|----|----|----|----|--------|--------|----|----|----|----|----|---------|----|---------|----|
| Pinion/ Gear | 09 | 99 | 42 | 46 | 20 | 26 | 58, 62 | 64, 68 | 40 | 44 | 48 | 54 | 52 | 38, 38, | 36 | 26, 26' | 28 |

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| | | | | | | 3/0 |) | | | | | | |
|-------------------------|----|--------------------------|------------------------------|--------------------|--------------------|--------------------|--------------------|----------------------|--------------------|--------------------|--------------------|--------------------|-------------------------|
| | 30 | 1 | 1 | O/R | × | × | O/R | t | O/R | × | × | O/R | ı |
| Se | 22 | ДO | Applied | Applied | #O | #O | Applied | Applied | Applied | ДO | #O | Applied | Applied |
| Clutch / Coupler States | 98 | Neutral | Neutral | Left | Left | Left | Left | Neutral | Right | Right | Right | Right | Neutral Neutral Applied |
| tch / Cou | 84 | Neutral | Neutral Neutral | Neutral Neutral | Neutral | Neutral Neutral | Neutral Neutral | Neutral | Neutral Neutral | Neutral | Neutral Neutral | Neutral | Neutral |
| Clu | 82 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Left | Left | Left |
| | 02 | Teff | <i>yeq</i> | цeц | <i></i> | Right | Right | Right | Right | Right | Neutral | Neutral | Neutral |
| | | Ready for forward launch | Completion of forward launch | 1->2 shift, step 1 | 1->2 shift, step 2 | 1->2 shift, step 3 | 1->2 shift, step 4 | 1->2 shift, complete | 2->3 shift, step 1 | 2->3 shift, step 2 | 2->3 shift, step 3 | 2->3 shift, step 4 | 2->3 shift, complete |

Figure 3

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Figure 3 cont.

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| | | Clu | Clutch / Coupler States | pler State | Se | |
|--|-----------------|-----------------|-------------------------|-----------------|---------|----|
| | 20 | 82 | 84 | 98 | 22 | 30 |
| 3->4 shift, step 1 | Neutral | Left | Neutral Neutral | Neutral | JJO | ı |
| 3->4 shift, step 2 | Neutral | Right | Neutral Neutral | Neutral | #O | , |
| 3->4 shift, complete | Neutral | Right | Neutral Neutral Applied | Neutral | Applied | • |
| 4->5 shift, step 1 | Neutral | Right | Neutral Neutral | Neutral | JJO | |
| 4->5 shift, step 2 | Neutral | Neutral Neutral | Left | Neutral Neutral | #O | • |
| 4->5 shift, complete | Neutral Neutral | Neutral | Left | Neutral | Applied | ŀ |
| Ready for reverse launch | Neutral | Neutral Neutral | Right | Neutral | #O | • |
| Completion of reverse launch Neutral Neutral | Neutral Neutral | Neutral | Right | Neutral Applied | Applied | , |

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| | | Speeds | S | | Torque |
|------------------------------|---------|---------------------------------------|--------|--------|--------|
| | Primary | Primary Secondary Clutch Output | Clutch | Output | Ratio |
| Ready for forward launch | 0.000 | 1 | 1.000 | 0.000 | 0.000 |
| Completion of forward launch | 0.711 | ı | 0.000 | 0.314 | 3.185 |
| 1->2 shift, step 1 | 0.711 | 0.711 | 0.000 | 0.314 | 3.185 |
| 1->2 shift, step 2 | 0.703 | 0.703 | 0.011 | 0.310 | 3.221 |
| 1->2 shift, step 3 | 0.402 | 0.703 | 0.434 | 0.310 | 3.221 |
| 1->2 shift, step 4 | 0.711 | 1.240 | 0.000 | 0.548 | 1.824 |
| 1->2 shift, complete | 0.711 | • | 0.000 | 0.548 | 1.824 |
| 2->3 shift, step 1 | 0.711 | 0.711 | 0.000 | 0.548 | 1.824 |
| 2->3 shift, step 2 | 0.703 | 0.703 | 0.011 | 0.542 | 1.845 |
| 2->3 shift, step 3 | 0.476 | 0.703 | 0.330 | 0.542 | 1.845 |
| 2->3 shift, step 4 | 0.711 | 1.830 | 0.000 | 0.809 | 1.237 |
| 2->3 shift, complete | 0.711 | • | 0.000 | 0.809 | 1.237 |

Figure 4

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0.000

0.809

0.231

0.546

0.951

1.052

0.000

0.000

1.052

0.000

0.711

0.711

3->4 shift, complete

3->4 shift, step 2

3->4 shift, step

0.590

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Torque

Ratio

Clutch

Secondary

Primary

0.711

Speeds

0.000

0.809

0.000

6/6

0.000

1.052

0.170

0.790

1.267

0.000

0.000

0.000

1.000

0.000

0.711

0.711

Completion of reverse launch

Ready for reverse launch

4->5 shift, complete

4->5 shift, step 1
4->5 shift, step 2

Figure 4 cont.

-3.185

-0.314

0.000